INTERNAL WORKING DOCUMENT

NO. 86-10

1985 AERIAL HERBICIDE APPLICATION PROGRAM

A total of 15,175 hectares of plantations were proposed for aerial herbicide treatment by the Licensees in 1985. Timber Management Branch tendered for spray and spotter aircraft in early May. Three Bell 206 B Jet Ranger helicopters from Trans Maritime Helicopter and two Ag Cat 164-B's from Cedar Brook Farms were contracted to carry out the aerial application. The cost was $22.11/ha for the helicopters and $20.14/ha for the fixed wing. In addition, three spotter aircraft were contracted; one Bell 47G2 and a 47G4 were supplied by Trans Maritime at a cost of $85 and $95 per flying hour respectively. An additional charge of $350.00 a day was agreed to for each helicopter. Chatham Air Services supplied a Cessna 172 at a contracted rate of $72.80 per flying hour.

A total of 66,000 litres of Roundup herbicide was purchased from King Grain Ltd. for $21.24 per litre. Another 416 litres of Garlon 4 herbicide was purchased from Dow Chemical at 22.00 per litre. In addition to this supply 815 litres of Roundup purchased from the 1984-85 budget at $24.20 per litre completed the herbicide inventory.

On July 5th an application for a spray permit along with detailed maps of areas requested for treatment was delivered to the Department of Environment. On July 29, 1985 a formal permit was signed by the Minister of Environment giving TMB the authority to carry out the operation (Appendix I). Some late changes and revisions to the program were also sent to Environment for approval. These revisions were all accepted and formal permission granted.

forests mines energy / forêts mines énergie

Department of Forests, Mines & Energy
Timber Management Branch

All necessary mixing equipment, vehicles, trailers, etc. had been assembled and made ready a least a week prior to the commencement of the program. A total of 27 casual employees were hired to help carry out the program.

Prior to commencement of the operational spraying, maps outlining the spray blocks accompanied with a tentative spray schedule was sent to Regional DFME headquarters for dispersal to District offices. These maps were used by District staff to show the public where DFME's spray blocks were located. Regional staff also supplied TMB spray crews with tanker services and experienced local staff that helped in carrying out the actual program.

Spraying commenced on August 6, 1985. During the next 35 days, three spray crews (Appendix II) were able to complete the scheduled program. Summaries of the 1985 Crown land program can be found in Appendices III through VI.

Arrangements were made in mid-August between TMB and two New Brunswick Private Woodlot organizations to treat approximately 400 ha of private lands at the conclusion of our operations on Crown Land. TMB obtained a permit from Environment and did these blocks on September 12 and 13, 1985. The private woodlot organizations provided the chemical, paid for the aircraft and salaries for TMB's spray crew. Summaries of this operation is found in Appendix VII.

APPENDIX I

Permits issued by the Dept. of Environment

Minister of the Environment
Province of New Brunswick

Ministre de l'environnement
Province du Nouveau-Brunswick

P.O. Box/C.P. 6000, Fredericton, N.B., Canada, E3B 5H1 Tel. (506) 453-2634

July 29, 1985

Mr. Malcolm T. McDonald
Department of Natural Resources
Timber Management Branch
P. O. Box 6000
Fredericton, N. B.
E3B 5H1

Dear Mr. McDonald:

This will acknowledge receipt of your July 5, 1985 application on behalf of the Department of Natural Resources.

In accordance with Section 12(1) of the Pesticides Control Act, this Permit No. P80, hereby authorizes the aerial application of Garlon on an experimental basis to 100 hectares of woodland and Roundup (P.C.P. No. 13,644) for conifer release to approximately 15,075 hectares of woodland as outlined in your submission, subject to the following conditions:

1. That only the above pesticides are permitted and must be used according to label instructions;

2. That the formulation of Garlon be as referenced in the Federal Research Permit No. 229-RP-85;

3. That the research report generated as a result of the trials with Garlon be forwarded to the Chairman of the Pesticides Advisory Board when available;

4. That no spraying of Garlon be conducted within 8 km of occupied habitation;

5. That additional areas and/or pesticides may be added to your permit only after written approval has been given;

6. That a setback from occupied habitation of 155 metres be maintained for Roundup;

7. That only those areas approved by the Pesticides Advisory Board be treated;

8. That no spraying be conducted within 65 meters of bodies of water with the exclusion of intermittent streams which are dry during the time of application;

9. That no spraying be conducted when wind speeds at the treatment area exceed 16 km/hr;

10. That no spraying be conducted within 3.2 km upstream from the the point of extraction of any municipal surface drinking water supplies;

11. That no spraying be conducted within 50 metres of property borders where there exists the possibility of spray drifting onto land not owned or controlled by you;

12. That the areas to be treated are clearly identified for the pilot;

13. That access to the areas being treated with herbicides be controlled and that signs denoting a herbicide application is in progress be posted;

14. That no human flagmen be used;

15. That all personnel involved in the supervision of mixing and loading operations; all personnel involved in the guidance of the aircraft administering the pesticide; and, all personnel applying the pesticide, must hold a valid Class A certificate;

16. That all personnel involved in the mixing and loading of pesticides must wear coveralls, footwear and gloves impermeable to the pesticide, splash glasses and a half-faced respirator with NIOSH approved pesticide cartridges;

17. That the Chairman or staff of the Toxic Substances Section be notified a minimum of 48 hours prior to the intended date of the commencement of your program;

18. That cooperation be given to any monitoring personnel or inspector;

19. That the procedure for the disposal of empty pesticide containers be strictly adhered to;

20. That a summary of pesticides used for 1985 be forwarded to the Chairman of the Pesticides Advisory Board no later than December 31, 1985; and,

21. That this permit will expire September 30, 1985.

Yours truly,

C. W. Harmer

Minister of the Environment
Province of New Brunswick

Ministre de l'environnement
Province du Nouveau-Brunswick

P.O. Box/C.P. 6000, Fredericton, N.B., Canada, E3B 5H1 Tel. (506) 453-2634

August 16, 1985

Mr. Maurice Barteaux
TIMBER MANAGEMENT BRANCH
P. O. Box 6000
Fredericton, N. B.
E3B 5H1

Dear Mr. Barteaux:

Please be advised that an additional 587 hectares of forest land has been added to your **Permit No. P80** as requested in your August 13th and August 15th submissions; and, that all conditions of **P80** apply to these additions.

Yours truly,

C. W. Harmer

Minister of the Environment
Province of New Brunswick

Ministre de l'environnement
Province du Nouveau-Brunswick

P.O. Box/C.P. 6000, Fredericton, N.B., Canada, E3B 5H1 Tel. (506) 453-2634

September 9, 1985

Mr. Maurice Barteaux
Department of Natural Resources
Timber Management Branch
P. O. Box 6000
Fredericton, N. B.
E3B 5H1

Dear Mr. Barteaux:

Please be advised that an additional 37 hectares of private forest land has been added to your **Permit No. P80** as requested in your September 4th, 1985 submission; and, that all conditions of **P80** apply to these additions.

Yours truly,

C. W. Harmer

Minister of the Environment
Province of New Brunswick

Ministre de l'environnement
Province du Nouveau-Brunswick

P.O. Box/C.P. 6000, Fredericton, N.B., Canada, E3B 5H1 Tel. (506) 453-2634

September 10, 1985

Mr. Maurice Barteaux
Department of Natural Resources
Timber Management Branch
P. O. Box 6000
Fredericton, N. B.
E3B 5H1

Dear Mr. Barteaux:

Please be advised that an additional 62 hectares of private forest land has been added to your Permit No. P80 as requested in your September 4th, 1985 submission; and, that all conditions of P80 apply to these additions.

Yours truly,

C. W. Harmer

APPENDIX II

TMB Spray Crew Organization

1985 Herbicide Spray Operation

Organization

M. K. Barteaux
Mgr. Reforestation & Silviculture

Mack McDonald
Chief of Operations
Supervisor Crew #1
(2 Bell 206-B sprayers and 1 Bell 47G2 spotter)

Don Carlin
Supervisor Crew #2
(1 Bell 206B sprayer
and
1 Bell 47G4 spotter)

Ground Supervisor - Chuck Harding

John Reed
Supervisor Crew #3
(2 AgCat sprayers
and
1 Cessna 172 spotter)

Ground Supervisor - Tom MacFarlane

Each crew also consisted of a mixer, a loader, two truck drivers and 4 road blockers.

APPENDIX III

Area Sprayed in hectares by herbicide, rate and volume delivered

APPENDIX IV

Area Sprayed in hectares by Licensee

APPENDIX V

Detailed account of blocks sprayed, by Licensee

1985 HERBICIDE PROGRAM

Licensee: UPSALQUITCH Region: 1
(continued)

AREA #	LOCATION	MAP #	TARGET SIZE (ha)	RATE OF HERBICIDE (L/ha)	AREA DESCRIPTION	DATES SPRAYED	VOLUME DELIVERED (l)	APPLICATOR'S FLIGHT TIME
1-1-11	Tetagouche R.	94,95	216.0	4.2 (3.9)	E173 E126 E038	Sept 5 pm Sept 6 pm	7 571	CBF 5 hrs 34 min
1-1-12	J. Ferguson Bk.	114	66.0	4.2 (3.5)	0112	Aug 19 am	2 044	CBF 1 hr 18 min
1-1-13	Camel Back Mtn.	116	248.0	4.2 (3.2)	0J06 0J13 0J15	Aug 16 pm Aug 17 am	6 984	CBF 5 hrs
1-1-14	Upsalquitch Lk.	139	310.0	4.2 (3.9)	0013 0036 0037 0038	Aug 17 am Aug 18 am, pm Aug 19 am	10 754	CBF 6 hrs 49 min
TOTAL			2 472.0	4.2 (3.7)			81 405	46 hrs 36 min

1985 HERBICIDE PROGRAM

Licensee: LOWER MIRAMICHI Region: 2

AREA #	LOCATION	MAP #	TARGET SIZE (ha)	RATE OF HERBICIDE (L/ha)	AREA DESCRIPTION	DATES SPRAYED	VOLUME DELIVERED (l)	APPLICATOR'S FLIGHT TIME
2-3-1	Redstone Bk.	282	187.4	4.2 (4.3)	336,337,338	Sept 2 am	7 268	CBF 7 hrs 56 min
2-3-2	Sevogle	228 229	662.1	4.2 (4.2)	357 to 361 363,364	Aug 23 pm Aug 24 am,pm Aug 25 am	24 984	CBF 9 hrs
TOTAL			849.5	4.2 (4.3)			32 252	16 hrs 56 min

1985 HERBICIDE PROGRAM

Licensee: KENT Region: 2

AREA #	LOCATION	MAP #	TARGET SIZE (ha)	RATE OF HERBICIDE (L/ha)	AREA DESCRIPTION	DATES SPRAYED	VOLUME DELIVERED (l)	APPLICATOR'S FLIGHT TIME
2-5-1	Bass River	323,342 361,362	106.0	4.2 (4.4)	0202 0204 0205 0206	Aug 26 am	4 122	IMH 2 hrs 46 min
TOTAL			106.0	4.2 (4.4)			4 122	2 hrs 46 min

1985 HERBICIDE PROGRAM

Licensee: QUEENS-CHARLOTTE Region: 2,3,4
(continued)

AREA #	LOCATION	MAP #	TARGET SIZE (ha)	RATE OF HERBICIDE (L/ha)	AREA DESCRIPTION	DATES SPRAYED	VOLUME DELIVERED (l)	APPLICATOR'S FLIGHT TIME
3-6-8	Meadow Brook Lake	377	42.0	3.21 Roundup + 0.2% Soap (3.7)	TP-11-82	Sept 8 am	1 816	TMH 1 hr 26 min
SUB TOTAL			813.1 358.0 1 171.1	4.2 (4.4) 3.21 Roundup +0.2% Soap (3.3)			32 268 13 620 45 888	18 hrs 51 min 4 hrs 43 min 23 hrs 34 min
4-6-1	Shin Ck.	606	54.0	4.2 (4.7)	9949	Aug 30 am	2 270	TMH 1 hr 13 min
4-6-2	Scoullar Mtn.	622	134.0	4.2 (5.2)	0012	Aug 30 am	6 228	TMH 1 hr 45 min
4-6-3	West Long Lk.	637	153.0	4.2 (5.1)	9938 9945	Aug 30 am	6 917	TMH 2 hrs 21 min
SUB TOTAL			341.0	4.2 (5.1)			15 415	5 hrs 19 min
TOTAL			1 154.1 953.0 2 107.1	4.2 (4.6) 3.21 Roundup 0.2% Soap (3.4)			47 683 37 608 85 291	24 hrs 10 min 10 hrs 52 min 35 hrs 2 min

1985 HERBICIDE PROGRAM

Licensee: FUNDY Region: 3,4
(continued)

AREA #	LOCATION	MAP #	TARGET SIZE (ha)	RATE OF HERBICIDE (L/ha)	AREA DESCRIPTION	DATES SPRAYED	VOLUME DELIVERED (l)	APPLICATOR'S FLIGHT TIME
3-7-11	New Scotland	422 442	105.0	4.2 (4.3)	9988	Aug 22 am	4 060	TMH 1 hr 21 min
3-7-12	Monteagle	463 464	173.0	4.2 (4.7)	TP-2-78 TP-72-79 P-34-79	Aug 22 pm Aug 23 am	7 264	TMH 2 hrs 55 min
3-7-13	Coles Island	531	320.0	3.21 Roundup +0.2% Soap (2.7)	9771	Sept 8 pm Sept 9 am, pm Sept 10 am	9 934	TMH 3 hrs 6 min
SUB TOTAL			2381.0 587.0 2968.0	4.2 (4.5) 3.21 Roundup +0.2% Soap (2.2)			96 612 15 412 112 024	32 hrs 54 min 4 hrs 29 min 37 hrs 23 min
4-7-1	McKenzie Bk.	432	254.0	4.2 (4.9)	9998 9999	Sept 5 am	11 214	TMH 2 hrs 56 min
4-7-2	Zionville	433	206.0	4.2 (4.7)	9983 9997	Sept 3 pm	8 552	TMH 2 hrs 25 min
4-7-3	Niles Bk.	482	69.0	4.2 (4.4)	0079	Aug 30 pm	2 724	TMH 1 hr 57 min
4-7-4	Clare Bk.	456	70.0	4.2 (5.1)	9951	Sept 1 pm	3 178	TMH 1 hr 10 min
4-7-5	Upper Durham	456	42.0	4.2 (3.6)	0038	Sept 1 pm	1 362	TMH 42 min

1985 HERBICIDE PROGRAM

Licensee: YORK Region: 4

AREA #	LOCATION	MAP #	TARGET SIZE (ha)	RATE OF HERBICIDE (L/ha)	AREA DESCRIPTION	DATES SPRAYED	VOLUME DELIVERED (l)	APPLICATOR'S FLIGHT TIME
4-8-1	Rocky Bk.	390	134.0	4.2 (4.3)	1001 1002	Aug 21 am	5 200	TMH 2 hrs 28 min
4-8-2	Herlett	454 479	142.0	4.2 (4.7)	1004	Aug 22 pm Aug 24 am	5 902	TMH 2 hrs 2 min
4-8-3	Pakiok	522 523	151.0	4.2 (3.9)	0020 0022	Aug 25 am Aug 26 pm	5 248	TMH 2 hrs 4 min
4-8-4	First Eel Lake	520	64.0	4.2 (4.0)	1008	Aug 25 am	2 270	TMH 37 min
4-8-5	Big Brook	430	150.0	3.46 Roundup +0.2% Frigate (3.6)	1006	Aug 22 am,pm	5 902	TMH 1 hr 55 min
4-8-6	Herlett	454	66.0	3.46 Roundup 0.2% Frigate (3.2)	1030	Aug 24 am	2 270	TMH 41 min
4-8-7	North Tay R.	410 430	140.0	4.2 (5.4)	1005	Aug 6 pm Aug 7 am	6 686	TMH 2 hrs
4-8-8	Williamsburg	390 391	88.0	3.46 Roundup 0.2% Frigate (4.3)	1007	Aug 21 am,pm	4 086	TMH 1 hr 35 min
TOTAL			631.0 304.0 935.0	4.2 (4.5) 3.46 Roundup 0.2% Frigate (3.7)			25 306 12 258 37 564	9 hrs 11 min 4 hrs 11 min 13 hrs 22 min

1985 HERBICIDE PROGRAM

Licensee: RESTIGOUCHE-TOBIQUE Region: 5

AREA #	LOCATION	MAP #	TARGET SIZE (ha)	RATE OF HERBICIDE (L/ha)	AREA DESCRIPTION	DATES SPRAYED	VOLUME DELIVERED (l)	APPLICATOR'S FLIGHT TIME
5-10-1	Kedgwick Forks	19	140.8	4.2 (4.1)	H-201,202	Aug 10 am Aug 11 am Aug 12 am	5 110	CBF 2 hrs 52 min
5-10-2	Summit	16,17 35,36	613.0 81.0	4.2 (4.8) (Garlon 4) 4.38 (5.14)	H-101 to H-108 H-112 to H-115 H-126 to H-129 H-109 to H-111, H-203,H204	Aug 14 am,pm Aug 15 am,pm Aug 16 am Aug 16 am	26 519 3 544	TMH 10 hrs 50 min 1 hr 24 min
5-10-3	Eight Mile Bk.	59	145.3	4.2 (5.8)	H-205 to H-208	Aug 11 am	7 478	TMH 3 hrs 3 min
5-10-4	Moose Valley Bk.	37 59	381.2 105.2[1]	4.2 (4.8) 4.2 (4.8)	H-136,138 to140 H-195 to H-197 H-209,210 H-139	Aug 13 am,pm Aug 14 am Aug 11 pm	16 465 4 540	TMH 6 hrs 56 min 1 hr 53 min
5-10-5	Union BK.	18 37,38	287.7	4.2 (4.6)	H-132 to H-135 H-211 to H-215 H-242	Aug 10 pm Aug 11 am	11 924	CBF 6 hrs 48 min
5-10-6	Clearwater	38,39	165.9	4.2 (4.3)	H-116 H-190,191	Aug 9 pm Aug 10 am	6 359	CBF 2 hrs 17 min
5-10-7	N.Br. Gounamitz R.	60	171.6	4.2 (4.2)	H-192 H-198	Aug 10 am	6 473	CBF 4 hrs 3 min
5-10-8	Six Mile Bk.	21	129.9	4.2 (3.6)	H-118 to H-121	Aug 12 am Aug 13 am Aug 14 am	5 451	CBF 4 hrs 21 min
5-10-9	Falls Bk.	81	106.4	4.2 (4.3)	H-148 to H-151	Aug 10 am	4 049	TMH 2 hrs 6 min

[1] 105.2 ha had 2 applications. The first application was nulified due to rain.

APPENDIX VI

Cost Analysis of the 1985 Spray Program

APPENDIX VII

Summaries of 1985 Herbicide Program on Private Land

1985 HERBICIDE AREAS

S.N.B. WOOD CO-OPERATIVE LTD.

LOCATION	OWNER	STATED ACRES	ACRES TREATED	HERB. RATE (LITRES OF ROUNDUP PER ACRE)	VOLUME DELIVERED (l)	[1]CHEMICAL ACRES	DATE SPRAYED
Shannon	L. McCrae	±130	130	1.70 l/ac	2066	136.4	Sept. 12 p.m.
Irish Sett.	I. Reid	±40	40	1.70 l/ac	454	30	Sept. 12 p.m.
				1.70 l/ac	454	30	Sept. 13 a.m.
					908	60	
Apohaqui	W. Jones	±200	225	1.70 l/ac	3632	240	Sept. 13 a.m.
Mechanic Lake	E. Murray	±60	60	1.70 l/ac	908	60	Sept. 13 a.m.
Harvey	H. Tingley	±250	270	1.70 l/ac	1278	84.4	Sept. 13 a.m.
				1.70 l/ac	3406	224.8	Sept. 13 p.m.
					4684	309.2	
TOTALS		±680	725		12198	805.8	

Amount of Roundup used = 1370 litres
% overlap = 11.14

[1] Chemical acres - Roundup and sometimes soap was added to water and applied at 15.15 l per acre Chemical acres in simply the amount of spray mixture (volume delivered) divided by 15.15.